CLAIMS

What is claimed is:

1 1. A method for marking one or more packets of data in a packet-switched network

2   based on achieved flow bandwidth information within the network, comprising the

3   computer-implemented steps of:

4   marking a first group of one or more packets of a data flow with a first behavioral

5   treatment value, wherein the first behavioral treatment value directs

6   devices within the network to treat the first group of one or more packets

7   with a first quality of service treatment;

8   determining an achieved flow bandwidth for the data flow based on data traffic

9   within the network;

10   determining a second behavioral treatment value based on the achieved flow

11   bandwidth within the network; and

12   marking a second group of one or more packets of said data flow with said second

13   behavioral treatment value, wherein the second behavioral treatment value

14   directs devices within the network to treat the second group of one or more

15   packets with a second quality of service treatment.

1 2. The method as recited in Claim 1, wherein:

2   the step of marking a first group of one or more packets includes the step of

3   storing a first differentiated services codepoint (DSCP) value in each

4   header of the first group of one or more packets of a data flow;

5   the step of determining a second behavioral treatment value includes the step of

6   determining a second DSCP value; and

7   the step of marking a second group of one or more packets includes the step of

8   storing the second DSCP value in each header of the second group of one

9   or more packets of a data flow.

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1   3.   The method as recited in Claim 1, further comprising the steps of:

2   determining packet flow characteristics of the first group of one or more packets

3   of a data flow; and

4   determining the second behavioral treatment value based on the available

5   bandwidth within the network and the packet flow characteristics of the

6   first group of one or more packets of a data flow.

1   4.   The method as recited in Claim 1, further comprising the steps of:

2   establishing a Quality of Service (QoS) policy for applying a per-hop-behavior

3   treatment for forwarding packets within a flow in said network; and

4   generating the first behavioral treatment value based on the established QoS

5   policy.

1   5.   A computer-readable medium carrying one or more sequences of instructions for

2   marking one or more packets of data in a packet-switched network based on

3   achieved flow bandwidth information within the network, wherein execution of

4   the one or more sequences of instructions by one or more processors causes the

5   one or more processors to perform the steps of:

6   marking a first group of one or more packets of a data flow with a first behavioral

7   treatment value, wherein the first behavioral treatment value directs

8   devices within the network to treat the first group of one or more packets

9   with a first quality of service treatment;

10   determining an achieved flow bandwidth for the data flow based on data traffic

11   within the network;

12   determining a second behavioral treatment value based on the achieved flow

13   bandwidth within the network; and

14   marking a second group of one or more packets of said data flow with said second

15   behavioral treatment value, wherein the second behavioral treatment value

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16   directs devices within the network to treat the second group of one or more

17   packets with a second quality of service treatment.

1   6.   The computer-readable medium as recited in Claim 5, wherein:

2   the step of marking a first group of one or more packets includes the step of

3   storing a first differentiated services codepoint (DSCP) value in each

4   header of the first group of one or more packets of a data flow;

5   the step of determining a second behavioral treatment value includes the step of

6   determining a second DSCP value; and

7   the step of marking a second group of one or more packets includes the step of

8   storing the second DSCP value in each header of the second group of one

9   or more packets of a data flow.

1   7.   The computer-readable medium as recited in Claim 5, further comprising

2   instructions for performing the steps of:

3   determining packet flow characteristics of the first group of one or more packets

4   of a data flow; and

5   determining the second behavioral treatment value based on the available

6   bandwidth within the network and the packet flow characteristics of the

7   first group of one or more packets of a data flow.

1   8.   The computer-readable medium as recited in Claim 5, further comprising

2   instructions for performing the steps of:

3   establishing a Quality of Service (QoS) policy for applying a per-hop-behavior

4   treatment for forwarding packets within a flow in said network; and

5   generating the first behavioral treatment value based on the established QoS

6   policy.

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1   9.   A computer apparatus comprising:

2   a processor; and

3   a memory coupled to the processor, the memory containing one or more sequences

4   of instructions for marking one or more packets of data in a packet-

5   switched network based on achieved flow bandwidth information within

6   the network, wherein execution of the one or more sequences of

7   instructions by the processor causes the processor to perform the steps of:

8   marking a first group of one or more packets of a data flow with a first

9   behavioral treatment value, wherein the first behavioral treatment

10   value directs devices within the network to treat the first group of one

11   or more packets with a first quality of service treatment;

12   determining an achieved flow bandwidth for the data flow based on data

13   traffic within the network;

14   determining a second behavioral treatment value based on the achieved

15   flow bandwidth within the network; and

16   marking a second group of one or more packets of said data flow with said

17   second behavioral treatment value, wherein the second behavioral

18   treatment value directs devices within the network to treat the second

19   group of one or more packets with a second quality of service

20   treatment.

1   10.   The computer apparatus as recited in Claim 9, wherein:

2   the step of marking a first group of one or more packets includes the step of

3   storing a first differentiated services codepoint (DSCP) value in each

4   header of the first group of one or more packets of a data flow;

5   the step of determining a second behavioral treatment value includes the step of

6   determining a second DSCP value; and

7   the step of marking a second group of one or more packets includes the step of

8   storing the second DSCP value in each header of the second group of one

9   or more packets of a data flow.

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11. The computer apparatus as recited in Claim 9, further comprising instructions for

performing the steps of:

determining packet flow characteristics of the first group of one or more packets

   of a data flow; and

determining the second behavioral treatment value based on the available

   bandwidth within the network and the packet flow characteristics of the

   first group of one or more packets of a data flow.

12. The computer apparatus as recited in Claim 9, further comprising instructions for

performing the steps of:

establishing a Quality of Service (QoS) policy for applying a per-hop-behavior

   treatment for forwarding packets within a flow in said network; and

generating the first behavioral treatment value based on the established QoS

   policy.

13. A network device configured for marking one or more packets of data in a packet-

switched network based on achieved flow bandwidth information within the

network, comprising:

means for marking a first group of one or more packets of a data flow with a first

   behavioral treatment value, wherein the first behavioral treatment value

   directs devices within the network to treat the first group of one or more

   packets with a first quality of service treatment;

means for determining an achieved flow bandwidth for the data flow based on data

   traffic within the network;

means for determining a second behavioral treatment value based on the achieved

   flow bandwidth within the network; and

means for marking a second group of one or more packets of said data flow with

   said second behavioral treatment value, wherein the second behavioral

   treatment value directs devices within the network to treat the second

   group of one or more packets with a second quality of service treatment.

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14. A method for marking one or more packets of data in a packet-switched network based on achieved flow bandwidth information within the network, comprising the computer-implemented steps of:

causing one or more network devices to mark a first group of one or more packets of a data flow with a first behavioral treatment value, wherein the first behavioral treatment value directs devices within the network to treat the first group of one or more packets with a first quality of service treatment;

determining an achieved flow bandwidth for the data flow based on data traffic within the network;

determining a second behavioral treatment value based on the achieved flow bandwidth within the network; and

causing one or more network devices to mark a second group of one or more packets of said data flow with said second behavioral treatment value, wherein the second behavioral treatment value directs devices within the network to treat the second group of one or more packets with a second quality of service treatment.

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